

*Diagnosis and Treatment of Vascular Disease*

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**ABSTRACT**

The present invention is based at least in part on the discovery of a polymorphism  
5 within the lysyl hydroxylase 2 (PLOD2) gene. Accordingly, the invention provides nucleic  
acid molecules having a nucleotide sequence of an allelic variant of a PLOD2 gene. The  
invention also provides methods for identifying specific alleles of polymorphic regions of a  
PLOD2 gene, methods for determining whether a subject is or is not at risk of developing a  
disease which is associated with a specific allele of a polymorphic region of a PLOD2 gene,  
10 *e.g.*, a vascular disease, based on detection of polymorphisms within the PLOD2 gene, and  
kits for performing such methods. The invention further provides methods for classifying a  
subject who is or is not at risk for developing, a vascular disease or disorder as a candidate  
for a particular clinical course of therapy or a particular diagnostic evaluation. The invention  
further provides methods for selecting a clinical course of therapy or a diagnostic evaluation  
15 to treat a subject who is or is not at risk for developing, a vascular disease or disorder.